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THE

NARROW & WIDE GAUGES  
CONSIDERED ;

ALSO,

EFFECTS OF COMPETITION

AND

GOVERNMENT SUPERVISION.

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## THE GAUGES.

The 4-8½ gauge, or 5 feet from centre to centre, was originally fixed upon as assimilating with that of carriages on the common road.

It existed in the Mineral Districts previous to the introduction of Passenger Railways.

In the earlier Passenger Railway Acts, the 4-8½ gauge was rendered imperative; why the clause was afterwards discontinued does not appear.

No inconvenience has ever been experienced from, nor has any accident ever been attributed to the use of that gauge.

Mr. Brunel, in forming the Great Western Railway, made a deviation from the 4-8½ gauge to one of 7 feet. But for this deviation, the probability is, that no question would ever have arisen whether the 4-8½ (or narrow gauge as it is called), or what other gauge, is the best for locomotive purposes.

Of the two gauges *de se*, the general opinion among engineers seems to be that the one is about equally good with the other; not one among them, not even the originator himself, presumes to say that a gauge of 7 feet is preferable to all others.

Mr. Shaw, the chairman of the Committee on the Wolverhampton project, in his explanation to the House on the motion for bringing up the Report, says, "If the question was now entirely open as to what

ought to be the uniform gauge, many of the most eminent professional men would be very cautious in committing themselves on the subject."

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#### REASONS ASSIGNED FOR THE USE OF THE WIDE GAUGE.

The chief reasons assigned by Mr. Brunel for a departure from the common width of gauge, were,—

1. Attainment of higher rate of speed. 2. Increased lateral steadiness to the carriages and engines, and
3. Greater space afforded for the works of the engine.

1. The Great Western Company have, at present, by far the most powerful engines for speed on any Railway, (unless perhaps we except the Northern and Eastern), the attention of their engineer having been particularly turned thereto. In a little time there will be equally powerful engines on the narrow gauge lines. Even now, however, there is very little difference between their performance on the two gauges, particularly when we take into account the favorable nature of the gradients on the Great Western line, a matter made all important with the engineer, and attained by him regardless of cost.

There are, at the present time, more powerful goods' engines on the narrow gauge Railways than on the Great Western, or wide gauge.

Mr. Stephenson says, "the narrow gauge admits of having as powerful engines, both for passengers and goods (that is, speed and weight) as the broad gauge. The large passenger engines on the broad gauge, and the goods' engines on the narrow gauge, weigh about 22 tons, which is as much as the present weight of rails will bear. If this weight is exceeded, whether it

be on the narrow or the broad gauge, a total reconstruction of the road will be required. There is no difficulty in getting a much greater speed on the narrow gauge than has ever yet been attained on any line. The power of the engine may be employed either in carrying a heavier load, or in accelerating speed—they are convertible terms.”

“The grand resistance, the limit to speed, is the atmosphere.”

The difference between load and speed depends upon the size of the driving-wheel of the engine. The Great Western Company had originally engines with 10, 8, 7, and 6 feet driving-wheels; they have now settled down to 7 feet. The narrow gauge are fixing the size of the driving-wheels of their passenger engines at 6 feet 6.

2. An engine equally powerful for speed on the narrow as on the broad gauge, would be equally safe and steady. Steadiness is obtained by length of carriage rather than by width of rail. The same applies to the carriages. There is nothing to prevent the same length of engine and carriage on the one gauge as on the other. Any one travelling on the broad and narrow gauge will find that the narrow gauge is, in fact, the steadier of the two.

It may, perhaps, be worth while to notice here an article in the Morning Herald of Saturday last (July 5), which, after making a comparison of the speed with a gross load on the wide and narrow gauge lines (but which to have been stated fairly, should have given instead of the *gross* the *net* load, or actual mileage of the passengers conveyed, and also the difference of power in the engines employed),—proceeds to give some grossly incorrect calculation of the

relative costs of the engine power on the two gauges. After stating in decimals the cost per ton per mile on each, it derives this result, that for every £25,625 cost of locomotive power on the Great Western line, the cost of the narrow gauge lines would average £47,989.

By working from gross amounts to decimals, and then back to gross amounts, the same effect appears to have been produced as by the Welsh Curate with the Sermons of Blair and Tillotson,—by translating them first into Welsh and then back again into English, he so disguised them that their most intimate acquaintance were unable to recognize them.

Now, what are the actual facts of the case, taking the London and Birmingham line, for the purpose of comparison.

The traffic receipts for the six months ended 31st December last, as shewn by the Companies published accounts, were as follows:

On the London and Birming-	}	£450,478	16	5
ham Line .....				
Great Western .....		440,387	4	8
The cost of Locomotive Power	}	36,145	16	9
for the same period, to earn				
the above amount.....				
Great Western .....		39,597	5	7

We believe we are correct in stating, that during that period, both the passengers fares and the goods' rates were less on the London and Birmingham than on the Great Western. If so, or even allowing that they were equal, for they certainly were not more, it follows either that the trains must have been heavier or the mileage greater on the London and Birmingham than on the Great Western, and in either case, *the cost for the same amount of work performed is considerably less*; a practical result of this kind must tell more with the shareholders and the public, as to the



relative merits of the two, than all the theories in the world.

By the accounts of the Companies above referred to, for the same period, it appears that the carrying stock, that is, the locomotive engines and carriages of the two Companies, has cost as follows :

Great Western . . . . .	£534,088	11	4
Interest for Half-year, }			
at rate of 5 per Cent }	13,352	0	0
London & Birmingham	258,430	10	4
Interest for Half-year, }			
at 5 pr. Cent. pr. An. }	6,461	0	0

3. There is as much, or more, space in the narrow gauge for the works of the engine than is actually wanted.

It thus appears that the three grand points, for the attainment of which Mr. Brunel was induced to make an alteration of the gauge,—viz. speed, steadiness of motion, and a sufficient space for the works of the engine,—are all equally attained or attainable on the narrow as on the broad gauge ; and that too, at less primary cost for the carrying stock, and less expense in the working.

#### DISADVANTAGES OF THE WIDE GAUGE.

The prominent disadvantages of the wide gauge are:—

1. Increase of 4 ft. 7 in. in the breadth of the roadway, and consequent increase of expense in its formation,—a matter of serious importance as regards branch lines—the greater radius of curves too which it requires, prevents its introduction with equal facility into hilly countries.
2. The inconveniences attending a junction with the narrow gauge lines.
3. The increased size and weight of the engines and carriages causing increased cost of construction, in-

creased liability of breakage of axles, &c. and increased labor to move about at the stations.

Both the Shareholders and the public are interested in a proper economy being observed in the construction of railroads.—By proper economy is meant, that no expenditure should be incurred which will not bring a corresponding benefit.—If, by an increase of gauge from 4 ft. 8½ in. to 7 ft., an extra expence of 20 per cent has been incurred without any improvement whatever over the narrow gauge having been effected, the same must be a permanent injury to the Shareholders or the travelling public—either the dividend must be less than it otherwise would have been by being divided over an additional capital of 20 per cent. or the charge to the passengers must be increased to that extent to cover it, which will not always answer. The increased width of gauge and the attainments of unnecessarily favorable gradients,—unnecessarily favorable because bringing no equivalent advantage,—have added, there is little doubt, about 40 per cent. to what would otherwise have been the cost of the Great Western Railway.

To the injurious effects which Mr. Brunel and the Great Western Company were warned would most likely arise, at some future time, if a departure from the gauge of the country was persisted in, Mr. Brunel thus alludes in his report to the Directors at that period, dated December 13, 1838.

“ The disadvantage of differing in point of gauge from other railways, and the consequent exclusion from communication with them, is undoubtedly an inconvenience,—it amounts to a prohibition to almost any railway running northwards from London. The Great Western Railway, however, broke ground in an entirely new district, in which railroads were unknown

—it would have no connection with any other of the main lines (northwards).

“ At the London extremity, from the moment the junction, as originally proposed, with the London and Birmingham was obliged to be given up,\* there existed no possibility of a connexion with any other line. The Great Western was therefore free to adopt its own dimensions,—and none of the difficulties which would entirely prevent such a course in the North of England, had any existence in the West; and consequently, all the general arguments advanced, and the comparisons made, on the supposition of such difficulties occurring,—all excellent in case they did,—are totally inapplicable to the particular case of the Great Western Railway, to which they have no reference whatever.”

Such is the statement made by Mr. Brunel at the time. How is this statement borne out by the facts as they exist at present?—

3. The increased size of the engines and carriages is objectionable, particularly in the case of branches from the main line, where, from the limited number of passengers, both the proportionate drawing power, and the gross weight to be drawn in proportion to the net weight, must vastly exceed those on the narrow gauge lines.

The objection is still greater as regards the goods waggons; their size renders them cumbrous and unwieldy,—too large for the traffic of the intermediate stations, and too heavy to be moved by the ordinary staff of men kept at those stations.—What would make a load on the small truck on the narrow gauge

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\* The Great Western was originally proposed to join the London and Birmingham at Kensall Green, and to have one common terminus.

line, will make but half a load on the wide gauge. The same applies, to a certain extent, to the principal stations on the lines where carriers are admitted. They might be able to fill a small truck, but not have a sufficient loading for a large one.

Where the particular traffic on the narrow gauge lines requires the use of large trucks, they can be had equally as well as on the wide gauge;—while, if on the wide gauge the body of the waggon is reduced to the size of the ordinary narrow gauge trucks, the under part of the carriage, axles, and wheels cannot be reduced likewise.

On some of the narrow gauge branch lines it has been found necessary, from the small traffic, to combine the first and second class carriages bodies on one frame, rather than resort to the alternative of either sending forward a couple of carriages comparatively empty, or subjecting the passengers to the inconvenience of a change of carriage. The compound carriage thus provided accommodates twenty-two passengers—a similar one on the broad gauge would have a space equal to sixty-four passengers.—The engine power in the former case would weigh about ten tons, in the latter eighteen.

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#### EXTENT OF THE GAUGES.

A statement laid before the Committee on the Oxford, Wolverhampton, and Rugby projects shews the present state of the gauges in England and Scotland, as follows:—

	Narrow Gauge.	Broad Gauge.
Miles completed . . . . .	884	261
„ in progress, or for which an Act has been obtained . }	1615	70
	<hr/> 2499	<hr/> 331
Miles before Parliament this session, including competing schemes . . . . . }	3089	550
	<hr/> 5597	<hr/> 881

Population proposed to be supplied by each, excluding London, narrow gauge 12,000,000, wide gauge 3,000,000. Unoccupied district 2,000,000.

Taking the lines completed at £35,000 per mile,—those in progress, or for which an act has been obtained, at £20,000 per mile, there will be  
Completed—

Narrow gauge	31	millions—	wide gauge	—9	millions.
In progress do.	33½	do.	do.	1½	do.
	<hr/> 64½			<hr/> 10½	

#### MEETING OF THE GAUGES.

A change of gauge necessarily places impediments to an uninterrupted transit of the traffic. With only one gauge, passengers with their luggage, gentlemen's carriages and horses, cattle, merchandise, and minerals would pass uninterruptedly throughout their journey. A contact of the gauges involves a change from the one gauge to the other,—and by whatever process this is effected, it must be attended with inconvenience, confusion, risk, loss of time, extra labor, and, as a consequence, additional expense—these being more or less, according to the extent of the traffic.

A system has been introduced on the narrow gauge Railways, called the "Clearing House System," by which the carrying stock of the several Companies passes over each other's line, for the purpose of avoiding all unnecessary shifting and trans-shipment. They may be regarded as a joint-stock **property**, each company using them paying for them at a certain mileage rate, with penalties in case of unnecessary detention. This free and uninterrupted transit along the lines, by reducing the expense of labor, and the amount of capital that would otherwise have to be employed in carrying stock, reduces also the cost of carriage,

Another injurious effect of the difference of gauge and the contact of the gauges is that the maximum stock of wagons must be kept on both gauges, for the purpose of meeting the irregularities of the traffic from either line,—and as the quantity of traffic varies at different times, the maximum number of porters must be kept in order to be prepared for the greatest possible amount of traffic that is likely to occur.

Another source of expense is the extra pilot engines required at the junction of the gauges. Two engines, one for each line, must be provided, whereas only one, or possibly not even one, would have been necessary, if there were no break in the gauge.

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#### TRANSHIPMENT OF GOODS FROM ONE GAUGE TO ANOTHER.

An attempt to modify the evils attending a meeting of the gauges, is proposed to be made as regards goods and minerals, by shifting the bodies of the narrow gauge trucks on to frames of the wide gauge. (No plan is suggested, nor does any mechanical contrivance

appear possible with regard to the passenger, horse and cattle traffic.)

A great deal of the strength of a carriage on a Railway depends on the firm connexion between the body and the frame of the carriage. Any system, therefore, requiring their separation, must be objectionable. The plan of shifting the bodies of trucks to other frames, has been tried on several Railways,—among others, the Canterbury and Whitstable—Liverpool and Manchester—Newcastle and Darlington, and Leicester and Swannington,—but the carriages soon became so rickety, and the inconveniences were found so numerous, that the plan was abandoned.

But even supposing that perfectly successful mechanical means could be devised for the purpose, and the transfer of carriage bodies was perfectly practicable, without the existence of the evils above stated, even then the stock on the narrow gauge lines is not applicable, not having been built on a principle to be so applied. A complete new stock of goods and mineral waggons would consequently be required to be made and maintained for the purpose, requiring additional station room, and additional hands for moving it,—in fact, requiring all the appliances of the station to be more complicated. Any attempt to lessen the inconvenience of transhipment, would, in short, be as bad or worse, than transhipment itself. The Board of Trade report that “the inconvenience resulting from the break of the two gauges at Gloucester, has been (found in practice) so great as to lead to an amalgamation of the two Companies, with a view to obviate it, by introducing uniformity of gauge throughout betwixt Bristol and Birmingham.”

## MIXTURE OF THE GAUGES.

In the case of short portions of a line intersecting lines of different gauges, it has been proposed to lay down rails for both. The Committee on the Oxford, Rugby and Wolverhampton projects have also required a clause to be inserted in the Great Western Bill, obliging them to lay down the narrow gauge, (as well as the broad,) if the Board of Trade shall deem it desirable. The Grand Junction Company have also stated their intention, in the event of the wide gauge being brought to Wolverhampton, to lay down the wide gauge on their line in order to afford the means of competition between the Great Western and London and Birmingham Companies.

1. The narrow gauge may be laid on the wide gauge lines, either by laying an inner rail on each road, or by laying the narrow gauge in the centre of each of the broad gauge lines, involving in each case two lines of way extra.
2. To lay the wide gauge on the narrow gauge lines, it would be necessary in most instances to increase the width of the cuttings, embankments, bridges, and tunnels, which, in some instances, would be impracticable, and in all would involve very serious expense. The wide gauge may do for the passage of the narrow, but the narrow will not admit the broad—as Mr. Muntz observed in the House of Commons,—“The hole that will admit the cat to pass, will admit the kitten too,—but the hole through which the kitten could pass, may be too small for the cat.”

The mixture of the two gauges would be likely to lead to danger from the increased number of switches and openings in the rails that would be rendered necessary.



The risk and expense of maintaining the permanent way would also be considerably increased.

The platforms at the stations would not be suitable for the two gauges.

If the carriages of the two gauges are worked together, there would require a double set of buffers to the carriages, whether the narrow gauge was laid in the centre or working on one of the wide gauge rails. In the latter case there would be in addition a difference of equilibrium in a train so constituted, rendering it lopsided, like a horse pulling with one trace.

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CONSIDERATION AS TO THE POINTS BEST ADAPTED FOR  
A JUNCTION OF THE GAUGES.

That an inconvenience must arise from the difference of gauges at the points of meeting, is pretty evident under the most favourable circumstances. The inconvenience must, however be submitted to. To compel either party to modify their gauge to that of the other is out of the question, the sacrifice of property that would result from such a measure, being too serious to admit of it being entertained for an instant. To combine the two gauges would be attended with all sorts of risks in addition to the sacrifice of property—indeed, as we have explained, both the one and the other would in some instances be impracticable. The time is, however, now arrived when the country which now divides the two must be filled, and the two gauges must come in contact somewhere. In settling these points of connexion, the object should be to fix it—

1. Where it is likely to involve the least interchange of passengers or goods, particularly the latter, from the one gauge to the other.

## 2. Where competition may be best prevented.

This second point should in reality be far the most important of the two considerations. What the broad gauge party are seeking is not simply the filling up the country and dividing the gauges, but to make by that means a way to the north, to compete with the narrow gauge lines for the northern traffic—that is the true state of the case, however it may be attempted to be disguised by calling it “a question of the gauges.”

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### EFFECTS OF COMPETITION.

The *effects* of competition we need hardly premise will be the same whether the competing lines are of the same or of different gauges.

It is necessary in starting to explain that the plan of estimating the working expenses of Railways at a certain per centage of the receipts is most fallacious. They may, under ordinary circumstances, be regarded as fixed or very nearly so, being about £600 per mile per annum for four trains each way daily, and about £60 per mile per annum for each additional train each way beyond four. To these charges are to be added the Government duty and Parochial rates, and the balance of the receipts beyond these sums is the Shareholders' interest on the carrying stock and roadway. The best means of showing the effects of competition will be by taking a few illustrative cases. We will consider,

1. Competition between two direct lines.
2. Competition of one main line with another by means of branches.
3. Competition, by means of branches to connect with lines acting as feeders to the line to be competed with.

4. Competition by branches, to compete with the feeders to the line competed with.

Case, No. 1. We will suppose both lines are equally favorably situated for obtaining the traffic; each, in the first instance holds out the inducement of low fares, a few extra passengers is the consequence, it may be 20, 30, even 50 per cent more. Of the receipts we say nothing; they depend upon the extent to which the competition is carried. As regards the original capital expended, and the working expenses incurred, there is no question that they are both increased 100 per cent. The former must always remain—the latter may be put an end to, and the receipts increased by a coalition—under such circumstances, can the competing parties do otherwise than coalesce, agree perhaps to wholly abandon the one line and work the traffic for their joint profit on the first, and though in such cases the public would have only *one line* to travel over, there is the interest of the cost of, not simply two carrying stocks, but of *two lines* to pay for. Instead of the Railway being a monopoly (as it is regarded, perhaps properly, by many of the public) seeking profit upon *one capital*, it has to seek it on *two capitals*.

Case, No. 2, has the same features with No. 1, with this addition, that the competition is a one-sided one. The one Company has to compete for its own legitimate traffic, without means of retaliating by a competition for the traffic of its competitor. The former has nothing from its terminus but what it competes for, while the other has the regular traffic of its own line undisturbed, with the addition over the branch and the portion of its main line of whatever else it may filch from the other line. Whatever it draws away to its main line is absolute profit, and will more than repay

the loss that may be sustained on the branches. Either an arrangement must be come to, by the line competed with buying off the opposition, or some other means, or the legislature must grant them likewise a branch to put the two companies on an equal footing. The case then becomes nearly similar to No. 1.

This case may be illustrated by the Great Western, Oxford, Rugby and Wolverhampton project, with the proposed branch to Birmingham.

Case No. 3, may be illustrated by the same project as the foregoing, coupled with the Grand Junction Company's intimated intention (already alluded to) of laying the broad gauge to Liverpool, and so using either the Great Western or London and Birmingham lines to London. Great as would be the expense to be incurred for the purpose, in road works and carrying stock, they calculate upon being well repaid by the means it would furnish them of fighting the one of these lines against the other—of course, for their own immediate advantage.

This policy they consider would strike other companies and lead them to do the same. In the words of their circular, they "deem it probable that many companies possessing trunk lines on the narrow gauge principle may find it to their interest to adopt both." The more the fares are reduced on the competing lines, the more exorbitant they have the power to make them on their own line. The passengers would be left at their mercy as to which of the competing lines they should go by, and to those especially, who were going to intermediate stations, the inconvenience and annoyance would be most serious. That two companies would long allow themselves to be made the catspaw of a third is not likely. Some arrangement would be

effected without the public interest being much consulted. The public are the marketable article, whether in the shape of an additional line not required, or a buying off of competition,—and having been bought, they must as a consequence, be sold.

It might be that the two, or the one singly (according to whether the Grand Junction Company worked them against each other, or held wholly to one of them) obtained a further competing line to Liverpool, in which case the final result must be an arrangement between all the parties in accordance with No. 1.

Case No. 4.—This case may be also illustrated by the proposed extensions of the Great Western Company's Oxford and Worcester project to Porth Dynllaen or Holyhead. What passed in evidence before the Committee on the Bill, will sufficiently explain this case. Mr. Walker, the engineer, said, that he considered that a Company which had the more productive and remunerating portion of the line from London to Worcester, would be likely to make a line through the less remunerating parts of the country, as they would feel the benefit of the traffic on their whole line, and would so be able to make decided profit which would not justify an independent Company in making the upper part of the line. Mr. Russell, the chairman of the Great Western Company, said, "he had no doubt whatever, that if the line were made from Oxford by Worcester to Wolverhampton, that the Great Western Railway Company would carry a line from Worcester to Porth Dynllaen, or on to Holyhead. We never should dream of making a line from Worcester to the coast of Wales, through Wales, unless we had a road between Worcester and London ; it would be madness."

Mr. Saunders, the Secretary of the Great Western Company, "had no doubt whatever, that if a line to Worcester was obtained, a continuation from Worcester to the Welsh Coast would follow as a matter of course. It would not be remunerative of itself; but with a line to Worcester, the Company would find it to their advantage to continue the line to North Wales. It is the mode by which all Railways are likely to be extended to more remote parts. It is always the interest of the parent, the main line, to make extensions."

Now, here is a line, proposed to be brought forward in competition with another line, the Chester and Holyhead, now in progress of formation; not that the public will be benefitted one jot by having two lines instead of one,—not that a second line would be remunerative, in fact, but for other objects, viz. to act as a feeder to the main line; the chairman of the Great Western Company says, "it would be madness" to undertake it. And this one line, already granted by Parliament, is to be sacrificed because a more powerful Company think that it might be attended with some partial benefit to their main trunk line.

The attempt of any Railway Company to bring about competition, under the plea that competition is superior to legislative control, is about upon a par with the old Highland Chieftains contending that their levying of black mail (to which it bears a great resemblance) was lending the laws assistance, and affording a protection which could not be obtained from the magistracy.

Can competition, however, exist for any length of time? Is it at all likely that *two*, or, at the utmost *three* parties, having the communication in their hands, and secure against a fourth, are likely long to compete; or

likely to be long without combining? In the case of the **Manchester** and Leeds, and **Manchester** and **Birmingham** Companies, the latter paid the former a certain annual sum to put an end to competition; something similar was proposed between the **Birmingham** and **Derby** and **Midland Counties** Companies, and it finally resulted in amalgamation. The **Chester** and **Crewe** line was purchased by the **Grand Junction** Company, for the purpose of preventing its extension as a competing line, and has never been worked to meet the public requirements to this day. The **Manchester** and **Birmingham** Company went to Parliament for a Line from **Manchester** to **Stafford**, for the purpose of shortening the route to **London**: the **Grand Junction** opposed it. After Parliamentary powers had been obtained, it was agreed by the **Manchester** and **Birmingham** Company to make their line only to **Crewe** instead of **Stafford**, conditionally that there should be no competition between the Companies.

What says **Mr. M'Culloch** on Railway competition? "It is idle," says he, "to trust to competition. Supposing a second road is made, its managers would, most likely, come to an understanding with the first, so that the tolls, instead of being reduced by the instrumentality of the new road, may be raised; and, were it otherwise, the question is, Was the second road really necessary? Could not the first road have sufficed for the whole traffic to be carried on by both lines? If this be the case, it is clear the second road has been resorted to as a device for reducing the tolls charged on the first; as a means, in fact, for doing that, by an outlay of some hundreds of thousands, or it may be, *millions of pounds*, which might have been quite as effectually done by limiting

the durations of the Act, authorising the first road, or by inserting a clause in it providing for the periodical revision of the tolls."

We have not alluded to the power of purchase of Railways given to Government last session, and which if acted upon, will require the purchase of two Railways instead of one.

The Fifth Report of the Select Committee on Railways on this subject at this time, with the evidence upon which it is based, is particularly worthy of perusal. It shews most completely the effects of competition; that it must end in combination, either openly or secretly, diminution of accommodation, and higher prices. The true and only mode of protecting the public beyond what is furnished by the two interests,—that of the public and the Company,—being very nearly the same, is by subjecting Railways as much as possible to Government control,—not the control hitherto exercised, but a real *bonâ fide* control, by which the several Companies, freed from the risk of competition and sacrifice of property, shall be enabled to afford, and shall be made to afford, all the benefit the Railway system is capable of, at the lowest charge that the cost of the line, and its use by the public, will admit.

Before considering the extent to which this control by Government shall be carried, let us consider the position in which Railway Companies have placed themselves under the sanction, and as they had every reason to consider, with the protection of Government.

The first Railway Shareholders came forward with their capital at a time when it was very doubtful what would be the result of the speculation. Its failure was, by the general mass of the public, regarded at the time as almost certain.



In proportion to the risk of a legitimate speculation, should be the chances of reaping a legitimate profit.

Investment in Railways should be regarded, to a certain extent, in the light of a patent, and, as such, not to be infringed, although, for the good of the community, it should be properly controlled. The patent or monopoly as some may please to call it, comes into the hands of the Shareholders, not from invention, but from enterprise in finding the capital to work it out, the same as Boulton in the case of Watt, or Need and Strutt, in the case of Arkwright. Whether the time of the patent should have been limited, it is now too late to enquire,—if it had been, the patent may not last the time that would have been allowed it; at all events these are early days to speculate upon it. The world will continue progressing,—the pack-horse, the coach without springs, the coach with springs, the diligence at four miles, and the stage coach at ten or eleven, have each given way, one to the other. The turnpike road, considered at one time almost perfection, has given way to railroads; the stage coach to the locomotive and railway train. The original railroad speed was under twenty miles an hour, it is now forty miles; it will shortly be fifty, and then invention will be at work to produce some means of locomotion to supersede it altogether. Although Government has not limited the time, the march of science will probably do so.

While, however, it lasts, it should be both protected and controlled by the legislature. Government might at the time have come forward to undertake the construction of the several railways, had it been then deemed expedient to do so. It declined taking the risk, but contented itself with fixing the maximum fares to be charged, at some twenty per cent. under the then

coach fares. After the system had been tried, and its success no longer doubtful, it took no means to fix the maximum of dividend according to the less degree of risk which then attached to the system, possibly considering that the main streams for locomotion having been first taken up, these secondary ones were not likely to exceed a moderate remuneration for their investment, The time, however, for all delicacy on the subject of interference is now gone by, when every existing company, having the slightest chance of present or future success, if left to itself, is threatened with a competitor,—when every day is bringing forth some new scheme, set on foot by some solicitor, engineer, would-be secretary or director, or premium-hunter; without reference to whether or not the public interests require it, or how far the private interests of other parties will be injured by it. Some of the new projects daily making their appearance in the papers, are of the most absurd character, and would be really amusing to contemplate, but for the very serious injury they may possibly effect, unless measures are shortly adopted to put an end to such wild, such reckless proceedings.

Some indeed of them really seem as if the parties had trusted to hazard as to the line they should put forth,—had shut their eyes with a map of England before them, with the determination that whatever two points on the map their pencil should touch first should be selected.—Their skeleton prospectus being fitted for all cases,—favorable gradients,—no engineering difficulties,—opening up a new line of country,—traffic immense: others seem as if they had stolen their ideas from some railway advertisement in the previous day's newspaper, when out comes the preliminary notice of an intended line through the same district, " which had

been long under consideration, due particulars of which, with the names of the provisional committee, engineer, secretary, &c. will be shortly announced."

Any one must be ready to acknowledge that the smaller the capital required for the production of an unlimited supply of any article (and the means of supply by a railway is unlimited) the cheaper that article can be supplied. And provided that article is supplied of the best quality, and at the cheapest possible price that the demand for it will admit, the producer only receiving a moderate interest for his capital, would it not be worse than folly on the part of the legislature to allow that capital to be doubled when it could prevent it, when the sole object that could result therefrom would be the supplying the same article either of inferior quality or at an increased price, in order to be enabled to pay the same rates of interest on the double capital. If, indeed, a vastly superior article could be produced, it would be a different thing. If, in a case of locomotion, some *new system* should be invented, by which present travelling should be as far surpassed as the present railway system surpasses the old mode of travelling, let it at once be admitted; let private interest at once give way—let railroads be interfered with, as canals and turnpike roads have been before them. But till something very superior does arise, let the present companies be properly protected; they have a patent right in the district, a right obtained by the outlay of millions. The district, under proper regulation, properly belongs to them, and neither their property as investors, nor that of the land-owners, should be allowed to be made ducks and drakes of, for the purposes of rash speculators, or unprincipled professionals.

Railroads are at present acknowledged by all to be a national benefit, but there can be no surer means of turning the benefit into a complete curse, than by pauperising the inventors in the present lines, by admitting all sorts of new and opposing schemes,—instead of having lines sharing a fair dividend, and with a respectable proprietary, finding their interests in serving the public by serving themselves at the same time,—to have, instead, a double set of lines barely able to pay the working expenses,—the managers, consequently, stinting the accommodation in every possible way,—running perhaps a couple of trains a-day, where, under other circumstances, there might have been a dozen, (and a dozen could far more cheaply be run, and at far less charge to the public where there was one line, than one train could on each of a couple of lines,)—in fact, just leaving so much of the benefit of the railroad as to make persons aware of what they have been deprived of by competition,—judging of the apple only by the core.

In no case is competition by the same description of locomotion fairly admissible. It may appear at the first blush to be but just that canal companies should be allowed to convert their property into a railroad, inasmuch as having been competed with by railway companies, they are entitled to compete in return. This, in my opinion, is altogether a false view of the case. Had the railway company competed with them by means of a canal instead of a railway, the argument would hold good,—but it was not so. It was by means of a different, a superior description of locomotion. Let the canal company produce some new system, as superior to the railway as the railway is to the canal, and then let them compete by all means, but not till

then. All their outlay in the conversion of the canal into a railway simply for railway purposes, and providing the stock, together with the capital which the amount of working expenses would represent the interest of, is the same in effect as regards the public as if the original railway had cost that amount more. If a new railway was required in the direction of the canal, the preference might be given to the canal company, but then only upon certain terms different from those hitherto allowed.

As to the necessity of two lines in any part of the country, in consequence of the magnitude of the traffic being too great for one line, it is ridiculous. No one properly acquainted with railroads could be dishonest enough to state such to be his real belief. There is no line at present in operation which could not admit ten times the traffic that it has or is ever likely to have under the most favorable circumstances.

We are quite prepared to concede that it would be right, nay, further, that it would be highly desirable, to put all railways under the proper supervision and control of Government; not such as has been hitherto adopted, but such as the more respectable Railway Companies, who have no unfair objects to accomplish, would prefer, and such as the public have a right to expect. The Shareholders could not be injured by it, but they will be materially benefitted by being freed from competition, and a continual dread whether the property they have invested, which may be worth thousands to-day will not be diminished to the same number of hundreds to-morrow. In fact, Railways are now rendered utterly insecure as an investment.

For the purpose then of bringing Railway investment once more to a healthy state, I purpose falling

back upon the Board of Trade, to make this department something more than the *nominis umbra* it now is,—to entrust it with tenfold the power it has hitherto had—not to call for their opinions, merely to disregard them, or to treat them with contempt,—to call them in, and when they have one foot on the threshold, to slam the door in their face—but to put them in a position in which they may do good and faithful service to the state—to relieve, by their means, Members of Parliament from the serious tax upon their time and patience to which they have been subjected during this present session, by sittings of five weeks in some cases, in Railway Committees,—to put an end, in fact, to Parliamentary contests, with its serious expenditure—and, more than that, to prevent the reckless interference with private property, whether of Land Owners or of Railway Companies already incorporated.

With reference to lines at present made, or authorised, I propose that their duty shall be—

1. To cause the regulations, bye-laws, signals, &c. to correspond on the several lines as nearly as their different circumstances will admit.
2. To require the Companies to run any additional number of trains over the whole, or a portion of their line, as they may consider requisite for the due accommodation of the public.
3. To require all lines connected with each other to have carriages of the same class in the trains which run in conjunction.
4. To regulate the arrival and departure of trains at the junction of lines with each other, so as to work as much as possible as if they were one Company.
5. To empower one company to work over the line of another, where it may appear to them that the same

would conduce to the convenience of the public,—the Company working over the line of the other to hand over to the Company whose line is worked over, the fares received on account of that line, the same as if the traffic had been conveyed by such Company; but the Board of Trade to allow a certain sum for the locomotive power and carriages not exceeding one shilling per mile for the engines, and the same sums for the carriages as may from time to time be fixed by the Clearing House.

6. To require all lines in the hands of the same Company to be worked at the same rate of fares, except under special circumstances, in which the Board of Trade may authorise a deviation.
7. To require all fares to be calculated according to geographical distance between station and station, and where the lines between two points are in the hands of two Companies, a proportionate reduction to be made by each, to be settled by themselves or by the Board of Trade.
8. To require a relative proportion between the fares of the three classes of passengers, by corresponding trains on the different lines.
9. To require all Companies freely to admit goods carriers upon all their lines, upon equal terms with each other, and with the Company where the Company act as their own carriers—and where the Company act as carriers, their account to be kept distinct, showing,
  - First. Their receipts on the line, the same as if the goods had been conveyed for other carriers.
  - Second. The additional charge made by the Company, and expense incurred in the collection and delivery, loading and unloading, of the said goods.

And if it shall appear to the Board of Trade that the two charges of carriage on the line and that of collection, delivery, &c., are not fairly proportioned to each other, they may direct an alteration therein, or direct a sum to be returned to the carriers periodically in the shape of drawback on the rate of the tonnage.

The policy here acted upon is, that of regarding Railroads in the same light as turnpike roads for passengers, and canals for goods, with this sole difference, that the locomotive engines and carriages upon them can only be beneficially and safely worked by being in the hands of one party. But beyond this, every one using the Railway should be on an equal footing with each other, and with the Company, so that the Company may not, by a difference in this respect, obtain exclusive privileges as regards the delivery of passengers and goods beyond the Railway. It is not intended to prevent them acting as carriers, if they think proper, but simply to prevent them using their interest in the Railway to wage an unfair competition off the Railway.

10. The charges for goods over the line shall be made known to all the carriers simultaneously. and to be in print,—and the same to be posted at all the stations where goods are delivered.
11. To admit in no case of a greater dividend than ten per cent. on the subscribed capital of any Railway Company, and five per cent. on the capital authorised to be borrowed, and actually borrowed. If the capital authorised to be borrowed shall have been converted to shares, then no greater dividend shall be shared on the joint stock than would have accrued had they been



distinct, thus—

Capital....	£30,000	... 10 per cent..	£3,000
Borrowed..	10,000....	5     „     ....	500
	<hr/>		<hr/>
	£40,000		£3,500
	8½ per cent.		

Where, up to the time of these powers being vested in the Board of Trade, the capital authorised to be borrowed has not been converted into shares, the Companies shall be precluded from doing so, or from renewing any loans,—but as the present bonds fall in, the capital authorized to be borrowed, and required for the Railway shall be borrowed from government at not less than 3½ and not exceeding 4 per cent.

Where a line produces more than the above percentage, (of 10 or 8½ as the case may be), the same to be handed over to government, who shall be at liberty to continue the fares at the same rate, or reduce them as they may think proper. The money thus received, to be expended in reducing or equalizing the fares on the branch lines. The grand object to be attained being equal charges on all the lines.

Government so far to have control over the fares as to require an alteration therein for any description of traffic, after the line has been opened five years, in which case the company shall have the option of either taking upon themselves the risk of the alteration directed, as to it being more or less remunerative than before the alteration, or of requiring the government to guarantee the maximum amount that has been received on the traffic for either of the three preceding years, government taking in such case the excess thereon, if any. All

arrangements of this kind to be in force for one year commencing 1st January, 1st April, 1st July, or 1st October. Three month's previous notice to be given by government, and one month's notice of option by company, otherwise the company to take the risk of the alteration upon themselves.

The object contemplated by this clause is a reduction of the fares, where it appears probable that such reduction will induce a compensating accession of traffic, although the Directors of the company may be too timid to run the risk of the reduction bringing in the same amount of income. Any receipts from lines whose net proceeds amount to more than ten per cent, will form a fund for paying the losses, if any, in these cases, and of further equalizing the charges on the branches to those of the main lines.

12. For the purpose of settling all disputes between companies at present incorporated, the matters in dispute to be referred to two persons on the part of each Company, and the joint members of the Board of Trade.
13. And, for the purpose of having as few Companies as possible, the Board of Trade to sanction amalgamation of Railways, or the purchase by one Company of another, subject to their approval both of the terms, and of the amount at which the future dividend of the combined lines is to be fixed. The object being not to admit, by means of the amalgamation, a much larger dividend than would otherwise be obtained, but to equalize the fares and simplify the working.
14. The Board of Trade to lay down a plan of keeping the accounts on the different lines, so as to obtain an uniformity of system throughout.

15. The government tax to be proportioned to the dividend—this will be the most easily accomplished by an allowance of a certain per centage, say, four per cent. on the amount shared, making government, in fact a shareholder to the extent of one 25th of the capital.
16. With reference to all lines of railway, which are now, or may be hereafter proposed.

The Board of Trade to decide whether or not such line is really required for the accommodation of the district, and if so, whether the line laid down or any other is best adapted for the purpose. As regards branches, it will, in many cases be found, that a circuitous line, taking in a greater number of towns and villages in its route, will be found more advantageous than a more direct line, which might leave some place unsupplied, and which might hereafter require a distinct branch.

Every main trunk to have the option of making the branch lines within its district, and not to be allowed to share more than five per cent. on the capital expended thereon,—that is to say, the total amount to be shared on the combined capital shall not be more than the sum that would be given by calculating the main line at its maximum per centage, and the branch at its maximum per centage. Any new branch lines made by the trunk lines to be worked at fares not exceeding those of the trunk line. By this plan, competing projects would be altogether put an end to. In most cases the duties of the parliamentary committees would be merely nominal, indeed they might be dispensed with. The Board of Trade, or some other body being empowered to adjudicate in the only case that could arise, that of injury to private property—whether the

line should be diverted, or what amount of compensation should be awarded.

2. Land valuers might be appointed by the Board of Trade, if thought advisable, to settle between the company and the land-owner as to the value of their land, and compensation. Or, it might be left as at present, the Board of Trade only appointing referees in case of dispute.

3. Where a branch line interferes with the lines of two companies, such for instance as the Trent Valley with the London and Birmingham and the Grand Junction, the same to be made jointly by the two companies, upon their agreeing to work trains over such line upon the same fares and in conjunction with all their trains over the main line. But if either of the said companies shall decline to make such line, then it may be made by the other company, subject to such regulations as may be previously settled by the Board of Trade.

4. In the case of a branch line which the Board of Trade may consider beneficial to the public, but which will afford the means of competing with another line,—the Board of Trade shall require the company thus obtaining the means of competition, to keep an account of the traffic passing over their main line, coming from the terminus adjoining the line competed with,—and, out of the amount thus obtained, shall repay to the company competed with the deficiency, if any, that may arise in consequence of opening this means of competition.—The same rate of fare to be charged over the branch and main line for the traffic from the competing end of the line, as is charged on the line competed with, unless otherwise allowed by the Board of Trade.

In the case of a main trunk line which the Board of

Trade may consider desirable, but which will interfere with the present lines, the Board to decide as to the extent to which each of such companies may be considered to be interfered with, and apportion the capital to be found by each in that proportion, subject to this stipulation, that there shall be such number of trains worked on such line upon its completion, as they may, from time to time, direct, and at a fare not exceeding the minimum charged on the main lines.

5. The regulation as regards dividend, shall be the same as provided for branches from main lines.

6. In the case, however, of the district through which the new line is required, being occupied by a canal, the Board of Trade may allow the line to be made by the Canal Company upon the following conditions.

1. That if made on the line of the Canal, the dividend to be shared by them shall not exceed 5 per Cent. plus the dividend that was shared from the canal on the average of the three preceeding years.
2. That if made independent of the canal, the dividend shall not exceed 5 per Cent. on the capital expended. Any surplus, in either case, to be handed to the Board of Trade, to be by them divided among the lines interfered with, in the ratio they may determine; that is, provided such lines are not sharing, independent of such sum, the maximum dividend allowed.
3. No allowance to be made in calculating maximum dividends for the time of completing the line. The Acts of Parliament allowing interest to be paid on the capital till time of completing the line, at not exceeding 4 per Cent. In the case, however, of a Company not availing itself of this clause, the Board of Trade might allow the dividend to be calculated

on the increased capital, which have arisen from their availing themselves of this clause.

7. In the case of a branch line being applied for by a majority of the residents in the district to be accommodated, and the same being considered by the Board of Trade advisable, but the Company occupying the main trunk shall decline to undertake to make the same, then the Board of Trade may sanction the same being made by an independent Company, in which case the Company shall not be confined to charge the rates of fare on the main line; but only not to exceed a maximum rate of charge to be allowed in the Bill, according to the circumstances of the case and subject to no greater dividend than 5 per Cent. The question being whether the number to be accommodated would prefer to pay for that accommodation at a higher price, or to forego the advantages of Railway communication.

In the event of the line being afterwards purchased by the holders of the main trunk, the stipulation, as regards fares on main trunk and branches, to apply the same as if the line had been made by the main trunk Company in the first instance.

Every Company to be required to close their Capital Account in twelve months from the time allowed in the Act for making the Railway; and advertisements to be inserted to that effect in the newspapers six months previous to that date, and requiring parties to send in their claims, the same as closing a partnership or trusteeship account; and that if not sent in by a certain date, the same will not be allowed. No increase to be afterwards made to the Capital Account without the sanction of the Board of Trade.